UNIVERSITY INSTITUTE FOR SOCIAL SCIENCES,

BUSINESS STUDIES AND TECHNOLOGIES

DOES OWNERSHIP INFLUENCE PERFORMANCE?

EVIDENCE FROM EUROPE

BY

INÊS MARGARIDA CADIMA LISBOA

Dissertation submitted in partial fulfilment of the requirements for the degree of

Master in *Finance*

SUPERVISOR:

PROFESSOR JOSÉ PAULO ESPERANÇA

MAY

2007

ACKNOWLEDGEMENTS

I am grateful to Professor José Paulo Esperança, for his valuable advice, guidance, and explanations, which have greatly improved this thesis. I also want to thank Professor Clara Raposo for all the support and the early suggestion about the thesis' theme and supervisor. Ivo Pereira guided my first access to collect the financial data from the DataStream database, while Helena Brandão taught me how to use Reuteurs database.

I also want to mention my friends and workmates from the Management and Economics Department of ESTG for their support, advice, and suggestions. Catarina Neves and Paulo Novo were particularly helpful and supportive throughout the whole period devoted to completion of this research.

Finally, I am especially indebted to my family, in particular my parents and my sister, for their continuous encouragement, tolerance, compassion and support in all the moments they shared with me.

To all, my sincere gratitude.

ABSTRACT

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We provide new evidence on the impact of ownership over firm performance, using a panel data of 853 corporate firms from 9 Continental European countries from 2000 to 2004. We confirm that owner-manager is significantly better performer than professional manager, due to the convergence effect. Moreover, this impact was found to be much more significant than ownership, whose link with performance could not be established. Additionally, ownership structure is not an endogenous variable as it does not vary in order to maximize the firm's performance, remaining relatively stable over time. Finally, we find evidence of several country and industry effects.

Keywords: Ownership structure, Insider Ownership, Firm Performance, Europe.
JEL Classification: G32, G34

RESUMO

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Este trabalho apresenta novos resultados acerca do impacto da estrutura de propriedade na performance da empresa, utilizando uma amostra de 853 empresas de 9 países da Europa Continental do ano 2000 até ao ano 2004. Neste contexto observou-se que o proprietário-gestor da empresa apresenta um melhor desempenho que o gestor profissional devido ao efeito de controlo. Este impacto é bastante mais significativo que a estrutura de propriedade cuja relação com performance não foi encontrada. Adicionalmente concluímos que a estrutura de propriedade não é uma variável endógena, uma vez que não varia no sentido de maximizar a performance da empresa, mas mantém-se relativamente estável ao longo do tempo. Por fim, confirmamos diferenças entre países e sectores.

Palavras Chave: Propriedade de Empresas, Governação de empresas, Performance da Empresas, Europa.
Classificação JEL: G32, G34

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1. INTRODUCTION

This work analyzes the influence of ownership on performance. We study whether differences in corporate governance across countries and industries can explain differences in performance. Observing ownership data from 853 Continental European corporate firms from Portugal, Spain, France, Germany, Belgium, Italy, Greece, Austria and Finland, over the period between 2000 and 2004, we aim at shedding light on the following questions:

- How does insider ownership influence performance?
- Which impact does ownership structure have on performance? Can ownership mitigate agency problems?

Several studies have been carried out to measure the impact of insider ownership and ownership concentration on firm performance, but these relationships remain unexplored in many contexts and nations. This study contributes to the empirical literature by providing new evidence from a wide variety of European companies, explaining the cross-sectional variation in results across countries and industries. Furthermore we expect that our findings help shareholders' choices on capital flotation and decisions about whether to sustain the firm's management or to contract a professional-manager.

The type of ownership structure and level of separation of ownership and control can affect the firm's performance by solving agency conflicts between majority and minority shareholders and between managers and shareholders. The classical problem of corporate governance is the "principal-agent" conflict, which emerges from the separation between ownership and control. The firm's owner can hire a professional to manage the firm instead of retaining the firms' control by himself. However the manager can take decisions which diverge from the shareholders' interests. To mitigate this problem, the manager may be compensated with some of the firm's shares to align his interests with those of shareholders, with a potentially positive impact on the firm's performance (Berle and Means, 1932; Jensen and Meckling, 1976; Demsetz, 1983). More recently, researchers analyzed another type of agency problems: the conflict of interests between minority and large shareholders. Minority' shareholders have limited voting rights precluding their capacity to effectively influence decision making, while majority shareholders have the power to act as the firm's real owner. Consequently we

can distinguish two main types of ownership structure: concentrated and dispersed ownership. Dispersed ownership can induce managers to adopt a free-riding behavior, however it can lead to gains in risk diversification and in higher market and job knowledge. On the other hand, concentrated ownership solves the conflict between shareholders and managers since control is either maintained by the major shareholder or he highly monitors the manager, which can improve the firm's performance. However, as the dominant shareholder shares ownership with minority investors, he can define the firm's strategy attending to his self-interests rather than a value maximizing approach, leading to the expropriation of minorities and a decline in performance (Hart, 1995; Shleifer and Vishny, 1997). In conclusion, we can say that both managerial ownership and ownership concentration can influence the performance because both variables appear to influence the firm's investment, strategy and growth opportunities.

The relationship between the performance and either insider ownership or ownership concentration were widely explored in the modern literature. The majority of the researchers focused their study in the U.S. (Demsetz and Lehn, 1985; McConnel and Servaes, 1990; Mehran, 1995; Cui and Mak, 2002), and the U.K. (Leech and Leahy, 1991; Mudambi and Nicosia, 1998). Only a few have ventured elsewhere: Finland (Eisenberg *et al.*, 1998), Japan (Morck *et al.*, 2000; Gedajlovic and Shapiro, 2002) and Spain (Miguel *et al.*, 2004). Finally, comparative studies are still at their infancy: Gedajilovic and Shapiro (1998), analyzed 5 countries: Canada, the U.S., the U.K., Germany and France; Thomsen and Pedersen (2000), analyzed 12 European countries: Austria, Belgium, Denmark, Finland, France, Germany, Great Britain, Italy, the Netherlands, Norway, Spain and Sweden; and Claessens *et al.* (2002) and Lemmon and Lins (2003) analyzed 8 East Asia countries: Hong Kong, Indonesia, South Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand. We extend the previous studies to 9 European countries, some of them already explored by Thomsen and Pedersen (2000) - Austria, Belgium, Finland, France, Germany, Italy, and Spain - whereas Greece and Portugal have not been examined in prior studies.

Firm performance, measured by market (Tobin's Q) and accounting (ROA) measures is regressed among both managerial ownership and ownership concentration in the three major shareholders. Using the OLS regression we test each equation individually, controlling some other variables that may also influence performance. Then we use a

simultaneous equation to test for the endogeneity of ownership variables and to ensure the robustness of our results.

We find evidence of a linear relationship between insider ownership and performance, confirming the alignment effect. Therefore, managers may take decisions that lead to the firm's performance maximization and so, as they acquire the company shares, the interests of both the managers and shareholders are aligned. Moreover, owner-manager is concerned with the firm's long term survival and reputation, which leads to an increase in the performance, while a professional manager is expensive according to the relationship benefits (gained from his market and professional knowledge) and costs (from the salary and non-productive investments).

Regarding the influence of ownership structure on the firm performance, we do not find evidence of the monitoring and expropriation effect as some researchers did (including Gedajlovic and Shapiro, 1998, Thomsen and Pedersen, 2000, Anderson and Reeb, 2003 and Miguel *et al.*, 2004). Therefore, our findings do not confirm that concentrated ownership leads to better performance than dispersed ownership. Hence, investors choose the ownership structure that maximizes their own strategy and interests, and do no change it to maximize the performance, due to problems of coordination and communication.

Our analysis focused on firms from 9 Continental European countries, with different corporate governance. The results confirm significant differences among countries. Each nation has specific institutional characteristics, macroeconomic instability, and investors' legal protection, which influences the type of ownership structure and the agency conflicts (Thomsen and Perdersen, 2000). The firms included in the study also belong to different industries and we found that firms from the same industry appear to have similar influences. Specifically firms of the same industry suffer from the same competition, financial pressure, growth opportunities and other factors that influence performance (Nickel *et al.*, 1997; Gedajlovic and Shapiro, 1998).

To conclude the study we addressed the endogeneity problem to confirm the robustness of the results. Contrary to Demsetz and Lehn (1985), Himmelberg *et al.* (1999) and Demsetz and Villalonga (2001), we do not find the ownership to be an endogenous

variable. Likewise, our results are robust, since the ownership structure does not depend on firm performance but remains stable over time.

Our study is structured as follows: in section 2 we present the theoretical background; then, in section 3, we introduce the theory, the hypotheses created and the model developed; in section 4 we describe the data and methodology; the results are shown in section 5; the results' discussion is provided in section 6, and finally the summary, conclusions and paths for future research are presented in section 7.

2. THEORETICAL BACKGROUND

"*A firm, therefore, consists of the system of relationship which comes into existence when the direction of resources is dependent on an entrepreneur*" (Coase, 1937:393).

As Coase (1937) referred in his seminal study, to be present in the market, a firm needs an entrepreneur. The entrepreneur or owner is the responsible for the firm's creation, management and survival. In order to do this the owner does not work alone, but rather establishes contractual relations with other investors, employees, suppliers, customers, creditors, and so on. These contractual relationships characterize each firm and are differentiators of the firm in relation to competitors. To manage the firm, the owner can hire a professional manager or can retain the control by himself. Maintaining the firm's control has private benefits, with the production of value to the shareholder. However it also generates costs because the shareholder has to acquire information about the manager's effort to produce output. In such case, the firm's owner is its manager and the private benefits obtained from the control maintenance are higher than the costs inherent to it (Dyck and Zingales, 2004). Conversely, there are several typical situations where the firm's owner does not sustain its control but is forced to establish a contractual relation with a specialist. For example, the owner can possess shares from several companies and he does not have time enough to control all firms. In one other situation, the owner can have poor knowledge and know-how about the market and the job. It is also normal to contract a professional in the case of multiple shareholders due to, for one hand, the difficulty to choose one owner to assume the firm's control and, on the other hand, the infeasibility to have many managers as it can lead to problems in communication and coordination. This separation of ownership and control is established by a contract between the manager and the shareholder which Jensen and Meckling (1976) define as "agency relationship"; The shareholder who acts as principal hires a person (the agent) to control the firm and, to increase his performance, the agent receives a pecuniary salary and some other amenities for doing that job (Demsetz, 1983). With this contract, in which the parties define each other's rights and obligations, their protection and the accomplishment of their goals are guaranteed. Regarding this contract it is difficult and expensive for shareholders to anticipate all future situations, to define how to deal with them, or to establish it in a legal form. Consequently, the contracts are incomplete, have gaps, and neglect some eventualities (Coase, 1937; Hart, 1995; Gomez-Mejia and Nuñez-Nickel, 2001). Moreover, managers can act differently from shareholder's interests, without complying the contract. They can perform

opportunistically and use their power to satisfy their self-interest, especially in the absence of appropriate incentives or sufficient supervision (Amihud and Lev, 1999; Lane *et al.*, 1999). Being a rational economic agent, the risks he faces for controlling the firm are not fully compensated, so he has the incentive to search for additional compensation through non compensatory means. This divergence of interests leads to what Jensen and Meckling (1976) called "agency costs". Additionally, managers are better informed than the firm's owner about the company's potential. This information asymmetry occurs because managers are responsible for the firm's growth and sustainability, and consequently they can take decisions which are more convenient to them, leading to the need of the firm's owner to pay to control managers (Demirgüç-Kunt and Maksimovic, 1998). The problem increases when the firm has higher free cash flow and poor project opportunities to invest in, since managers have few future cash obligations to accomplish, and so they can maintain diversification strategies and select projects that do not add value to the firm (Berle and Means, 1937; Bajaj *et al.*, 1998; Denis *et al.*, 1999). In order to minimize the managers' propensity to act opportunistically (the free-rider problem), shareholders need to create incentives, control and monitor managers.

"*Control is defined as the power to exercise discretion over major decision making, including specifically the choice of directors.*" (Leech and Leahy, 1991: 1418). There are diverse internal and external formal mechanisms of control that owners can use to align managers' interests with their own ones (Gomez-Mejia, 1992; Schulze, *et al* 2003). One way is to finance the firm with debt because if managers do not perform efficiently they loose their job and consequently their reputation in the market. In this case, they are obliged to pay future cash flow to the creditors (Nickel *et al.*, 1997). Moreover, senior and secured creditors can participate in the firm's decisions and evaluate and analyze the firm's performance. However, increasing debt leads to higher costs to the firm (bankruptcy costs) which may have problems in solving their payments to banks (Jensen, 1986). As the level of debt increases, the firm's equity becomes less representative, the risk to concede loans to this firm gets higher, making banks more reluctant to lend capital to the firm. Hence, the financial structure of the firm influences its investments' decisions, strategy and future performance (Aghion and Bolton, 1989; Titman and Wessels, 1988). Another way to align managers' interests with those of shareholders is through the market place for managers. If replacing managers is an easy

task, managers have an incentive to ensure the maximization of the firm performance to maintain their job (Fama and Jensen, 1983; Agrawal and Knoeber, 1996; Nickel *et al.*, 1997). Nevertheless, managers can either try to make themselves indispensable to the firm or increase debt, in order to reduce the discipline of the market for corporate control (Stulz, 1988; Jensen, 1983). Takeovers can also be used to align the interests of managers and shareholders (Jensen and Ruback, 1983; Morck *et al.*, 1989). When the board of directors is unable or unwilling to control the managers' decisions and the firm performs poorly by comparison with its competitors, the board can remove managers through takeovers that increase the firms' internal control (Morck *et al.*, 1989). In this case, the manager's ability to over-expand and over-invest is reduced, increasing the firm's efficiency (Bethel and Liebeskind, 1993). However, managers are likely to oppose takeovers even if shareholders can benefit from them, because inherent to takeovers are replacements of managers, and loss of prestige. Besides, it is difficult to distinguish between managerial incompetence, managerial opportunism or mere bad luck, and therefore the solution to increase performance can be unrelated with manager's substitution. Additionally, takeovers are perceived as a mechanism which provides economies of scale or synergies, increasing the firm's value. Conversely, Jensen (1986) finds that takeovers are expensive and can destroy rather than create value to the firm, because the adaptation to the new firm's environment can be hard to achieve. Finally, a common way to align managers' interests with those of shareholders is to induce managers to acquire company shares (Jensen and Meckling, 1976). As the fraction of shares detained by managers' increases, they loose the incentive to consume perquisites, preferring to maximize the firm performance. In this way managers increase their wealth and a result of a good job done is that agency costs are reduced (Agrawal and Knoeber, 1996).

Agency costs are not exclusive to the relation between managers and shareholders. They may also emerge between majority and minority shareholders. The firm can be detained by various investors and each investor has a different percentage of the firm's shares. Likewise, there are some investors, namely the major shareholders, who detain the firm's control and, therefore, are responsible for major decisions. Such investors can try to maximize their wealth through incorrect strategies, leading to the value expropriation of the small investors (Hart, 1995; Shleifer and Vishny, 1997). Consequently, only if investors are protected by law, they will decide to acquire part of the firm, otherwise they prefer to detain the firm's control or to invest in other companies to avoid losing

money. Minorities can also collect information and participate actively in the firm's decisions to control the dominant shareholders' decisions and strategies. In conclusion, we can affirm that diffused ownership leads, most of the times, to the separation of ownership and control and, inherently, to agency conflicts between managers and shareholders. By contrast, concentrated ownership leads to problems between major shareholders and minority investors. Therefore, there is not a consensual optimal structure, rather resulting from the equilibrium between the advantages and inconveniences of both. Additionally, we can say that the ownership structure, whether concentrated or diffused, and whether the major shareholders sustain or not the control, influences the decision making, the investment's opportunities and consequently the firm's performance.

2.1 INSIDER OWNERSHIP AND PERFORMANCE

The company's performance may be affected by manager's decisions as he can use the firm's resources to maximize his wealth rather than the firm's profits (Oswald and Jahera Jr., 1991; Pegels *et al.*, 2000). In their seminal paper, Jensen and Meckling (1976) observed that insider ownership can influence the firm's strategic behavior and corporate performance. That influence has been further studied by other researchers, in different national contexts and using diverse models. Mehran (1995), on 153 U.S. manufacturing firms during the period from 1979 to 1980, and Morck *et al.* (2000) on 373 Japanese manufacturing firms in 1986 found a positive relationship between insider ownership and firm performance. They concluded that as the ownership by managers rises, the free-rider problem of monitoring is curbed in consequence of the alignment of interests between managers and shareholders. Then, managers will try to maximize performance through investment in projects that add value to the firm. According to some researchers, managers can entrench themselves, leading to a decrease in the performance. Jensen and Ruback (1983) were among the first to explain both the alignment and the entrenchment effect. In the beginning, as alignment mechanisms increase and insider ownership raises, the agency costs decrease and the firm's performance increases. At intermediate levels of insider ownership the costs of the convergence effect (coincidence of ideas about how to govern a firm) are higher than its gains, and so managers' and other shareholders' interests may diverge. Additionally, managers can create a board difficult to monitor or try to preserve their job, even if they

are no longer competent or qualified to do it, leading to the entrenchment effect (Demsetz, 1983; Fama and Jensen, 1983; Shleifer and Vishny, 1997; Faccio *et al.*, 2001; Anderson *et al.*, 2003). Managers can maximize their self-interest, steal profit, output, assets or other securities of the firm they control, as well as overpay themselves or install unqualified family members in management positions, or make themselves irreplaceable (Fama and Jensen, 1983; Denis *et al.*, 1999; La Porta *et al.*, 2000; Gomez-Mejia and Nuñez-Nickel, 2001). Managers can also choose to invest in projects with low or negative returns, but that may satisfy their own expectations, and so agency costs increase due to coordination problems between shareholder and manager. Reaching higher levels of insider ownership, the performance increases because the firm's owner exerts the role of manager and obtains an incentive to avoid share-price decreasing decisions (Loderer and Martin, 1997).

Many researchers, analyzing the relationship between insider ownership and performance of one country found two inflection points, yet, the percentages of shares possessed by managers varied between studies, as the models analyzed and variables used differ. Some authors used accounting measures to calculate the firm's performance (Kumar, 2003), while others used market measures (Miguel *et al.*, 2004); some controlled a few number of variables (Gedajilovic and Shapiro, 2002) while others extended the control variables to a group (Demsetz and Villalonga, 2001). Their findings also diverge significantly. Morck *et al.* (1988) found a maximum point of performance at 5 percent of insider ownership and a minimum at 25 percent when analyzing the relationship pf Tobin's Q and insider ownership of 371 Fortune 500 U.S. firms. However, the relationship is weaker and instable because excluding the large firms of the sample generates different results. Part of this relationship, the alignment effect, was confirmed by Stulz (1988), McConnel and Servaes (1990) and Han an Suk (1998), who found a maximum at 40-50 percent of insider ownership when analyzing firms from the U.S., but failed to prove it at higher levels of insider ownership, due to lack of results' robustness. The level of shares possessed by managers is positively related to stock returns until it rises to 41.8 percent, because the managers' interests are more aligned with those of outside shareholders and hence the agency costs diminish. However, after that level, corporate performance decreases due to the problem associated with managers' entrenchment. Mudambi and Nicosia (1998) who analyze the relationship of the U.K. financial services industry during the period from 1992 to 1994, found a maximum at a higher level of insider ownership, 11 percent. In addition Cho

(1998), in order to analyze the impact of insider ownership on the firm's investment, replicates the study of Morck *et. al* (1988) and McConnel and Servaes (1990) being the firm's investment measured by capital expenditures and R&D expenditures of U.S. firms. Firm's performance is found to first increase until insider ownership reaches 7 percent, then decreases when managers own between 7 to 38 percent of the firm's shares and, beyond 38 percent the relationship becomes positive again. Holderness *et al.* (1999) found a maximum at 5 percent of insider ownership and a minimum at 25 percent when analyzing firms from the U.S., but the relation found is weaker because it was not statistically significant. Short and Keasey (1999) found that U.K. managers get entrenchment when insider ownership is between 12.99 and 41.99 percent. Also Faccio and Lasfer (1999) also discovered two inflection points when analyzing the relationship between insider ownership and firm performance of U.K. companies. They found a maximum at 19.68 percent and a minimum at 54.12 percent. However these inflection points vary depending on the measure of performance used and the relationship appears to be weaker especially to low growth firms. Kumar (2003) found that shareholding by managers in India affects negatively the firm's performance measured by the ratio ROA when insider ownership is at low levels of concentration (until 24 percent), increasing at higher levels because the interests of managers and shareholders are aligned. Miguel *et al.* (2004) analyzed the relationship between firm performance and insider ownership of the Spanish firms during the period from 1990 to 1999 and found two inflection points: a maximum at 35 percent and a minimum at 70 percent of insider ownership, confirming both alignment and entrenchment effect. Furthermore, Cui and Mak (2002) found other type of non monotonic relationship, a W-shaped relationship, when analyzing high R&D firms listed on NYSE, AMEX and NASDAQ. This kind of firms has distinct characteristics, such as high growth opportunities and information asymmetry, different board structures and different ownership structures, which justify the different relationship found. They found a minimum at 10 and 50 percent, and a maximum at 30 percent. From the information stated above we can conclude that insider ownership does not substitute other mechanisms to solve agency problems because, even if it reduces agency costs, it does not eliminate them. As a result, it is necessary to combine other mechanisms, as monetary incentives for achieving a good performance (Holderness *et al.*, 1999).

Why have these studies obtained different results? We cannot forget that the type of corporate governance, more specifically the system of rules and codes of conduct that disciplines the firm's control and influences the firm's performance, varies around the world. Consequently, it is normal that, for some countries, managers get entrenched at higher levels than for other countries. Moreover, the agency costs vary from firm to firm and from country to country, depending on the competition of the labor market, on the facility that managers can exercise their own preferences, on the level of the monitoring' activity costs and on the residual nature of their non pecuniary claims (Jensen and Meckling, 1976; Loderer and Martin, 1997). However, not only the differences in ownership structure across countries explain the results' discrepancy, but also other factors. Kole (1995) found that the variations in the results are not due to differences in ownership data, but can depend on the firm size or on the model analyzed. Size also plays a role, as medium and large companies will have a different performance from small firms mainly due to economies of scale, knowledge of the market, and facility to hire better managers. The type of industry, financial or other, can also influence the results obtained on the link between management ownership and performance. So when the study is restricted to a specific type of company the comparisons of results may not be reliable. In terms of the model analyzed each group of researchers define model, controlling different variables such as R&D intensity, advertising intensity, debt, or age, which can bias the comparisons across studies. Additionally, the variables used in each study are taken from different databases, some of which may be less reliable. Hence, to make effective comparisons across countries, some researchers extended their study to a diversity of countries. It was the case of Kaplan (1997) who analyzed the U.S., Japan and Germany. The U.S. firms' ownership appeared to be more dispersed, while in Japan and Germany the firms' ownership was more concentrated. Additionally, the managers' behavior also diverges across these countries. While managers' poor past performance is quickly corrected in the U.S. through the market for corporate control, and in Japan through the monitoring of banks, in Germany the relations are established in a long run and there is not enough effort to correct the inefficiencies. However, managers from the three countries seem to be affected by similar forces, since all firms want to maximize their performance and sustain their position in the market.

2.2 OWNERSHIP STRUCTURE AND PERFORMANCE

Performance is not only influenced by insider ownership but also by the ownership structure, because the latter influences the firm's growth opportunities and efficiency in risk taking (Chaganti and Damanpour, 1991; Bajaj *et al.*, 1998). There are two major types of ownership: concentrated and dispersed ownership. The first group typically made up of family firms, is more important in Japan and Continental Europe, as well as non financial and small firms. It is characterized by having a major shareholder, individual or institution and, additionally, a few minority shareholders. The firm' control is maintained by the large shareholder or he can hire a professional manager that will be highly monitored. Therefore, the free-riding problems between managers and shareholders are reduced, since the interests of both parties are aligned. Furthermore, shareholders have a propensity to be risk averse, preferring a conservative management, with efficient strategies in order to pass the firm onto the next generations (Franks and Mayer, 1997; La Porta *et al.*, 1999; Anderson and Reeb, 2003). However, being all the relationships established in a long term it may be difficult to correct poor past performance and to create benefits for the firm (Kaplan, 1997). Moreover, the owners can be less experienced than professional managers or knowledgeable and not motivated to innovate. Another problem occurs when the company has financial needs that exceed its internal resources because, as the market is illiquid, there are no individuals interested in paying the real amount of the firm' shares. Additionally, the major owner can avoid situations which lead to a dilution of his control, and preferentially establish strait relationship with banks to solve the firm' financial needs rather than increase equity. Finally, concentrated ownership may lead to worse performance due to the conflict between controlling owners and minority shareholders, as the major shareholder can try to appropriate the firm's wealth in order to maximize his personal utility. The second type of ownership structure, designed by dispersed ownership, is common in the U.S. and the U.K., as well as in financial and large firms. It is characterized by separated ownership and control, which creates free-riding problems because managers can act in disregard for the shareholders interests. Moreover, there are multiple minority investors and it is likely that no investor alone has interests enough to control the firm who exercises control has costs to do so and profits when are generate, include all shareholders, which means that the marginal cost of monitoring normally exceeds the benefits of improved performance (Anderson and

Reeb, 2003). This type of ownership structure dominates in countries where all investors are protected by law from expropriation in order to avoid the problem of loosing investors' wealth while detaining only a small part of the company. As the market for these companies is liquid, and inherently, the shares are correctly valuated, it is easy to increase the firm's equity rather than increase debt to finance investments, leading to a faster business growth. Moreover, there are efficiencies in decision making due to audacious investment policies, to innovation incentive, and to risk diversification (Eisenberg *et al.*, 1998), even if shareholders have little incentive to monitor managers due to the low difference between costs and benefits.

There is no satisfactory way of choosing the optimal ownership structure (Cubin and Leech, 1983). Each owner, according with his specific characteristics chooses to detain or not the majority of the firm's shares (Denis and Denis, 1994) taking the benefits-costs relation in account. Considering agency problems, it appears that family firms perform better than non-family firms because this institutional form solves the divergence of interests between shareholders and managers. Nevertheless, if there is more than one shareholder, there may be problems among majority and minority shareholders. Concentrated ownership is the predominant type of firms around the world especially because investors are poorly protected by law from expropriation, which provides an incentive for the large shareholder to control managers. Consequently, as the proportion of shares held by large shareholders rise, their interests and those of the firm are aligned, leading to an increase in the firm's performance (Demsetz and Lehn, 1985; Shleifer and Vishny, 1986, 1997). However, major shareholders can pursue certain strategies that maximize their wealth rather than the profit of all shareholders. Such divergence of interests between majority and minority shareholders is another source of agency costs. The dominant shareholder can expropriate minority investors by excluding them from decision-making, and establish excessive compensation packages for himself or limit the firm's growth to increase his wealth rather than the firm's, generating worse performance (Shleifer and Vishny, 1997; Anderson *et al.*, 2003). Besides, family ownership limits the potential for diversification and growth, as managers have less incentive to search for new investments. Additionally, the influence of family ownership in the performance depend on the form of family control and management: when the founder is the manager of the firm, the performance increases, but when the manager is a heir, the efficiency may not increase

as their attitude may be more defensive (Villalonga and Amit, 2006). Conversely, ownership dispersion can lead to free-riding problems between managers and shareholders, because ownership and control are usually separated and, consequently, managers can act differently from shareholders' expectation. As the number of shares detained by a single owner decreases, his incentive to monitor also diminishes, because his controlling costs are higher than his gains, which are in proportion with his holdings (Demsetz and Lehn, 1985; Leech and Leahy, 1991; Hart, 1995; Ang *et al.*, 2000; Gomez-Mejia and Nuñez-Nickel, 2001). Furthermore, firms with dispersed ownership benefit from the quick correction of managers' poor past performance, especially when the market for corporate control is active and from managers incentive to look for new and innovative projects, leading to the firms' performance maximization (Burkart *et al.*, 1997). Managers are motivated to present innovative projects and to have a good performance to sustain their presence in the company. In conclusion, we can say that shareholders choose the firm's ownership structure taking into account the trade-off between the incentive benefits of concentrated ownership and the costs arising from excessive concentration of risk, as well as the potential for expropriation of minority investors (Cubbin and Leech, 1983). Hence, the structure of ownership is not the same to each firm, but rather it is an element that characterizes the firm.

Many researchers analyzed the link between ownership and performance in order to determine the existence of an optimal structure of ownership. For instance, Leech and Leahy (1991) found a significant negative and linear relationship between firm performance and ownership concentration on their study of 470 U.K. listed firms. It appeared that firms with dispersed ownership were more diversified than firms with concentrated ownership, as well as investments in higher value projects due to the risk diversity they take. Additionally, the market for the firm's shares in case of ownership concentration was less developed and so the market discipline had a weaker effect on controlling managers' strategies. Later, in 1998, Mudambi and Nicosia confirmed this relation between ownership concentration and firm performance when analyzing the U.K. financial services industry. Contrary to these results, Wruck (1988) found a positive relationship between firm performance and the fraction of shares owned by the U.S. institutional investors. Such relationship confirms the monitoring effect that arises when there is a dominant shareholder. However, the U.S. is a country where the legal system is strong and minority investors are protected. This protects the interests of

minorities, reducing the divergence with dominant shareholders, which leads to an increase in the firm's wealth. Eisenberg *et al.* (1998) analyzed the interaction of the board size in the profitability of 900 small and midsize Finnish firms, including wealthy and bankrupt firms during the period between 1992 and 1994 finding that dispersed ownership leads to a decline in the performance. As the board size is more concentrated and the interests of managers and owners coincide, the firm's performance increases, reducing the free-riding problems. However, we cannot forget that the authors restricted their analysis to small firms, which are normally characterized by a concentration of ownership and control. In this case, it is expected that the manager tries to maximize the performance as it leads to an increase in his own wealth. Therefore, the results found in this study can be different from the ones expected in a study of larger firms, because, as we already mentioned, managers' behavior can diverge according to their power and prestige in the firm. The monitoring and discipline role played by the major shareholder was also confirmed by Morck *et al.* (2000), who analyzed Japanese firms. In Japan, investors are poorly protected by the legal system and most firms are characterized by ownership concentration. However, Japanese minorities, contrary to minority investors of other countries with equally weak legal system, are not expropriated since banks have an important role in controlling the firm performance, leading to the convergence of interests of both minor and large shareholders, as well as of both managers and shareholders. This positive and linear relationship between ownership structure and firm performance of Japanese corporations was also found by Gedajilovic and Shapiro (2002), that confirmed that Japanese large shareholders are motivated to and capable of monitoring managers for the reasons explained above (Morck *et al.*, 2000). This relation between ownership structure and performance is, according to other authors, non linear. Anderson and Reeb (2003) restricted their study to the 500 Standard & Poors finding that firm performance increases till ownership structure reaches around 31 percent and decreases afterwards due to the expropriation of minorities. The authors found that when dominant shareholders have enough power to decide alone on firm's issues, they can maximize their wealth at the expense of maximizing the firms' value, leading to conflicts of interests between minority and dominant shareholder. Miguel *et al.* (2004) also found a nonlinear relationship when analyzing the Spanish firms, concluding that the market value of the firm's shares increases till ownership concentration reaches 87 percent, due to the monitoring effect, but over that point minority shareholders can be expropriated, which leads to a decrease in the performance. Even though both Anderson

and Reeb, and Miguel *et al.* agree on the nonlinearity of the relation between ownership and performance, they diverge on the inflection point. This can be explained by the differences in the rights of shareholders of the countries used in the studies, since in Spain shareholders can need a higher number of shares to have enough power to decide alone. In conclusion, there is not consensus on the optimal ownership structure and it appears that one cannot talk about one, either, since for one group of countries the ownership diversification is more advantageous as a minority investor can be expropriated, whereas for other countries ownership concentration will provide control of the managers' behavior.

Divergence in corporate governance systems around the world related to differences in the legal protection of investors and its enforcement, the development of capital markets, the role of the market for corporate control, the industry, the competition, and others (Shleifer and Vishny, 1997; La Porta *et al.*, 1998) can explain the differences in results of the relationship between firm's performance and both ownership concentration and insider ownership. In countries with weaker legal systems as French civil law countries, shareholder's voting rights are normally violated and, therefore large shareholders are motivated to monitor managers, avoiding agency costs and leading to an increase in the performance. As the market discipline in these countries is less developed, shareholders prefer to own the majority of the firm's shares and control (Leech and Leahy, 1991). In countries where investors are protected by law from expropriation, as it is the case of the Common Law countries, the dispersion of ownership is more frequent. In these countries investors can diversify risk and, inherently, attract more investors to the firm. However, when managers are effectively in control, it can be difficult for shareholders to replace them. Beyond the difference of legal system, a fraction of cross-sectional variation in firms' performance can be explained by unobserved firm heterogeneity (Kumar, 2003). Differences among different studies can likewise be biased due to differences in the models and data used, which reinforces the need for cross-national studies of corporate governance. That was the case of Gedajilovic and Shapiro (1998) who analyzed 5 countries: the U.S., the U.K., Germany, France and Canada, and failed to confirm that performance is affected by differences in the systems of corporate governance. The researchers found a non linear relationship between ownership concentration and firm value in the U.S.: for low concentration levels, the performance decreases due to divergence of interests among

shareholders and to excessive diversification; as ownership concentration increases, the performance also increases. Ownership structure appeared to be unrelated to performance in the case of the U.K., France and Canada, whereas in Germany ownership concentration led to higher performance because it limited managerial divergence. Lastly, they found that, in general, firms which grow faster are, on average, more profitable. Thomsen and Pedersen (2000) also used the cross-national technique to analyze large companies from 12 European nations: Austria, Belgium, Denmark, Finland, France, Germany, Great Britain, Italy, the Netherlands, Norway, Spain and Sweden, during the period between 1991 and 1996. They found that ownership concentration *per se* does not influence the rate of return. A nonlinear relation between ownership concentration and firm performance was also found. They concluded that performance rises until ownership concentration reaches 66 percent, but exceeding beyond this level of ownership concentration, the performance decreases due to the entrenchment effect and rising risks increase. These results are related to the fact that in these countries the protection of minority is too small, and consequently, the interests of minorities are not taken into account by the major shareholder, leading to agency costs and to the decrease in the firm's performance. Moreover, these researchers used the market-to-book value and the return on assets to measure firm's performance, while most researchers use the Tobin's Q ratio. Also Claessens *et al.* (2002) analyzed the large traded corporations in 8 East Asian economies: Hong Kong, Indonesia, South Korea, Malaysia, the Philippines, Singapore, Taiwan and Thailand, and found that the firm's value increases with the cash flow ownership of the largest shareholder, due to the incentive effect. However, it falls when the control right of the largest shareholder exceeds its cash flow ownership because of the entrenchment effect. On one hand, the major shareholders are motivated to control managers, in order to maximize their firms' wealth and are able to collect information and oversee managers. However, on the other hand, the problem of entrenchment and value extraction can occur, being especially pronounced when there is a big divergence between control and cash flow rights. The same group of countries was also analyzed by Lemmon and Lins (2003) during the financial crisis of 1997, who concluded that firms in which minority shareholders are most subject to expropriation have a Tobin's Q 12 percent smaller then other firms. However, they failed to confirm the difference between firms with a separation between cash flow rights and control rights and firms with no separation. Finally, more recently, Maury (2006), that restricted his analysis to family firms from Western Europe (Austria,

Belgium, Finland, France, Germany, Ireland, Italy, Norway, Portugal, Spain, Sweden, Switzerland and the U.K.), found that active family control leads to an increase in the performance, as the agency problem between ownership and managers is solved and, therefore, the firm's efficiency may improve. However, they found no difference between passive family ownership and non family ownership.

2.3 ENDOGENEITY

Most studies found that ownership structure and managerial ownership have a significant impact on performance. However some exceptions have to be pointed. Demsetz and Lehn (1985) studied 511 large corporations, and found no relation between ownership and performance, having concluded that since individuals choose the ownership structure that minimizes their costs, the studies previously developed could be biased. A similar conclusion was drawn by Cho (1998), Himmelberg *et al.* (1999), and Demsetz and Villalonga (2001) who suggested that ownership variables are endogenously determined in equilibrium by changes in ownership structure in order to achieve the firm's performance maximization. Moreover these researchers believe that the results found by the generality of researchers can be spurious, because performance can influence ownership structure rather than the opposite. The investor chooses an ownership structure when the firm is created. If its performance is small by comparison with the competition or the investors' expectations, he can change the ownership structure by rearranging his portfolio in order to maximize both the firm and his own wealth. Therefore, it seems that not only firm's performance will influence the ownership structure, but the contrary will be also true, and so ownership structure *per se* may not influence the firm's performance, but there may be other variables that influence it such as debt, market force, competition and others (Thomsen and Pedersen, 2000). Nevertheless, Zhou (2001) found that ownership structure remains stable over the years, meaning that significant adaptation and coordination costs preclude the yearly adaptation of ownership structure. Since ownership can be shared by several investors, it may be complex to reach a common agreement on ownership structure modifications. If a firm has a concentrated ownership, it can be complicated to find investors interested in paying the real value for the firm's shares and to persuade investors to share the firm's control. In case of multiple shareholders it may be complex to encourage investors to sell their shares to a dominant shareholder. Consequently, if on one hand it

is logic for the ownership structure to change over time in order to satisfy investors' may aim, on the other hand investors' inertia blocs the firm portfolio rearrangement.

In the following section we describe the model used in this study to analyze the relationship between both insider ownership and ownership structure, and performance. The results will be tested for results' robustness, in order to support our results and conclusions.

3. THEORY, HYPOTHESIS AND MODEL

In this section we first present the hypotheses developed as the basis of our study, and explain their theoretical background. Finally, we describe the models that will be used to test each hypothesis.

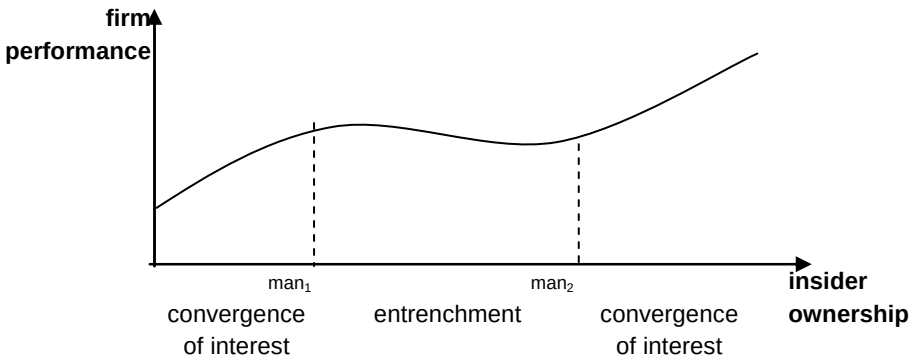
3.1 THEORY AND HYPOTHESES

Our study focuses on two main points: insider ownership and ownership structure. Initially, we hypothesize how ownership influences performance. Additionally, we try to explain the differences found across industries and nations. Finally, we address the endogeneity problem, in order to confirm the robustness of the results.

3.1.1 Insider Ownership and Performance

As we stated before, ownership and control can be separated, as the shareholder can hire a professional manager who is responsible for the definition of the firm's strategy and investments. However, the manager can allocate the firm's resources in his own interest, since there may be divergences in the interests of managers and shareholders: shareholders want to maximize their wealth while managers prefer to satisfy their self-interest. This may generate significant "agency costs" leading to a decline in the firm's performance. As seen earlier, one way to align managers' interests with those of shareholders consists in encouraging managers to acquire the company's shares. Larger manager ownership is expected to raise the performance. Nevertheless, some researchers[1], as Morck *et al.* (1988), Short and Keasey (1999), Kumar (2003), and Miguel *et al.* (2004) found a cubic relationship between performance and insider ownership. When the percentage of shares in the hands of managers is at intermediate levels, it may be difficult to monitor managers who try to keep their job, even if they are inefficient. Moreover, managers can appropriate profits and make decisions that satisfy their individual interests, which leads to the expropriation effect and, consequently, to a decrease of the performance. At higher levels of insider ownership, shareholders and managers are the same person and the interests of both parties are more clearly aligned. Consequently the manager will try to increase the firm's performance as it increases his own wealth (figure 1).

[1] All previous researches are summarized in Table 13, in attachment.



Picture 1: Graphical Representation of the Influence of Insider Ownership on Firm Performance

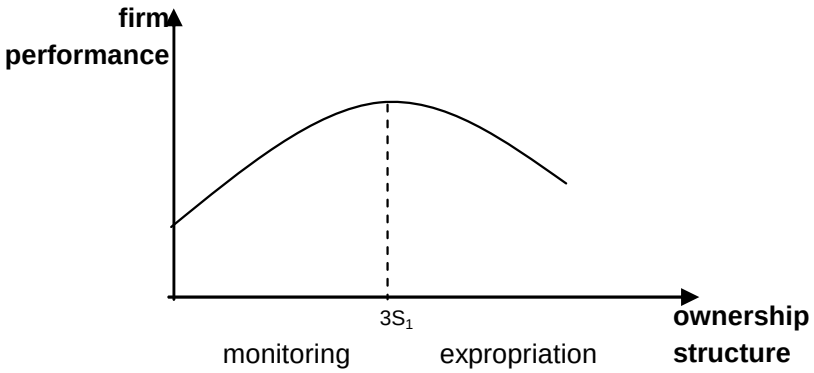
Hypothesis 1: Firm's performance increases with insider ownership at low levels, then at intermediate levels the performance decreases due to the entrenchment effect, and finally at higher levels of insider ownership firm's performance increases again because of the alignment effect.

3.1.2 Ownership Structure and Performance

The ownership structure, whether it is concentrated or dispersed, influences the relationship between the company and other stakeholders, the investment opportunities, the firm's growth and, consequently, the performance. The dispersion of ownership is normally associated with innovative and audacious investments, because the risk is diversified among shareholders. Nevertheless, it may imply problems of communication and coordination, due to the diversity of shareholders and to the separation of ownership and control. Likewise, shareholders need to monitor managers in order to avoid expropriation. However, since monitoring is costly and benefits all shareholders, in the percentage of their holdings, and not only the shareholders that paid the costs, no one is interested on doing it. This phenomenon leads to free-riding problems and to a decrease in the performance. As the number of shareholders decreases, the problems of communication and coordination also diminishes, the interests of all shareholders get aligned, and inherently the performance will increase. Although, according to Gedajlovic and Shapiro (1998, 2002), Thomsen and Pedersen (2000) and Miguel *et al.* (2004), among others[2], this is a nonlinear relationship in which at high levels of

[2]All previous researches are summarized in Table 14, in attachment.

ownership concentration, performance decreases because the major shareholder can be motivated to expropriate minority' wealth by achieving his personal non-value-maximization objectives rather than the firm's wealth objective. Therefore, the divergence of interests between large and minor shareholders leads to another problem of "agency costs", which in turns decreases the firm performance (figure 2).



Picture 2: Graphical Representation of the Influence of Ownership Structure on Firm Performance

Hypothesis 2: As ownership concentration increases, the firm's performance raises due to the monitoring effect, but at higher levels of concentration the performance decreases because of the expropriation of minorities.

3.1.3 Variations across Industries and Countries

This study is based on companies from 9 Continental European countries: Portugal, Spain, France, Germany, Belgium, Italy, Greece, Austria and Finland, and 12 industries, namely basic materials, capital goods, conglomerates, consumer cyclical, consumer non-cyclical, energy, financial, healthcare, services, technology, transportation and utilities (taken from the variable Reuters sector existent in the Reuters' database). Both country and industry variables can influence the performance, because each country and industry provides similar environmental conditions, including concentration, research and development, competitiveness, maturity, growth opportunities, financial pressure and others. We first grouped the data by industry to measure its impact on the firm's performance.

Hypothesis 3: Companies from different industries enjoy different levels of performance.

Then we grouped the data by country and analyzed the effect of each in the performance, since companies from the same country have the same macroeconomics scenario.

Hypothesis 4: Companies from different nations enjoy different levels of performance.

3.1.4 Endogeneity

Finally we addressed the endogeneity problem in order to verify if the results found in this study are spurious or not. The importance of endogeneity and simultaneity was stated by several researchers (Demsetz, 1983; Demsetz and Lehn, 1985; Cho, 1998; Himmelberg *et al.,* 1999; Demsetz and Villalonga, 2001) when analyzing the influence of ownership structure on firm performance. The ownership structure appears to be less stable over the years (Zhou, 2001) and can change due to internal or external factors. Investors can rearrange their portfolios in order to increase the firm's performance or maximize their own interests. Likewise, the performance can be endogenously determined, which leads the results found to be unrealistic. This process is complex and difficult to achieve: in the case of concentrated ownership, investors may not want to surrender the firm's control; within dispersed ownership, shareholders may not want to sell their shares to a group of individuals. Moreover, ownership structure *per se* may not influence the firm's performance, as other influencing variables such as debt, market force, or competition may be at stake (Thomsen and Pedersen, 2000). In this direction, our study analyzes whether the firm's benefits can overtake the costs generated by the modification of the ownership structure. Being the ownership structure an exogenous variable, the results of our study will present robustness.

Hypothesis 5: Ownership structure is an exogenous variable and so all the results found are robust.

3.2 MODEL

In this section we present the different models used to test the hypotheses explained before. The Ordinary Least Square method was used to estimate the equations of the first three subsections, whereas the Two Stages Least Square estimation was used to address the endogeneity. Two measures of firms' performance were chosen: a market measure- Tobin's Q and an accounting measure - Return on Assets. Likewise, control variables were used because it is expected that the firm's performance is not only influenced by the ownership structure but also by some external and internal environments. Finally, we included i firms, during t periods (from 2000 till 2004). We choose the year 2000 to start the analysis since all accounting data will be in Euros, and finish in 2004, the last year with available data.

3.2.1 Insider Ownership and Performance

The first hypothesis was tested using a cubic relationship between insider ownership and firm performance (equation 1). Such relationship allows us to validate both the alignment at lower and higher levels of insider ownership and the entrenchment effect. Moreover, following the studies of researchers such as Himmelberg *et al.* (1999), Cui and Mak (2002), Kumar (2003) and Miguel *et al.* (2004) six control variables were included: firm's size, age, growth opportunities, debt intensity, capital intensity and R&D intensity.

$$\begin{aligned} Performance_{it} &= \alpha_1 IO_{it} + \alpha_2 IO^2{}_{it} + \alpha_3 IO^3{}_{it} + \gamma_1 Size_{it} + {}_3 \\ &+ \gamma_2 Age_{it} + \gamma_3 GO_{it} + \gamma_4 Debt_{it} + \gamma_5 CI_{it} + \gamma_6 RDI_{it} + \varepsilon_{it} \end{aligned} \quad (1)$$

Equation 1: How Does Insider Ownership Influences Firm Performance? A Cubic Relationship

We also verify if, instead of a cubic relationship, a quadratic relationship between insider ownership and firm performance exists, because some studies such as Kumar

[3] Equation of the maximum of insider ownership of the quadratic relationship

$$\frac{\partial Performance_{it}}{\partial IO} = 0 \Leftrightarrow \alpha_1 + 2\alpha_2 IO_{it} = 0 \Leftrightarrow IO_{it} = -\frac{\alpha_1}{2\alpha_2}$$

Equation of the maximum and minimum point of insider ownership of the cubic relationship

$$\frac{\partial Performance_{it}}{\partial IO} = 0 \Leftrightarrow IO = \frac{-2\alpha_2 \pm \sqrt{4\alpha_2^2 - 12\alpha_1\alpha_3}}{6\alpha_3}$$

(2003) and Han and Suk (1998) found only one inflection point. The inclusion of this analysis is due to a possible alignment effect at low levels of shares possessed by managers and to an entrenchment effect after these levels. Finally we analyze the presence of a linear relationship because Mehran (1995) and Morck *et al.* (2000) only confirm the alignment effect, it means, as the percentage of shares detained by shareholders increase, the performance also increases.

3.2.2 Ownership Structure and Performance

The second hypothesis was tested by the firms' performance running a regression of ownership concentration, which is measured through the percentage of shares possessed by the three major shareholders, as well as its square, in order to validate the monitoring and expropriation effect. Six control variables were also included: firm's size, age, growth opportunities, debt intensity, capital intensity and R&D intensity (equation 2), following Gegajlovic and Shapiro (1998 and 2002), Himmelberg *et al.* (1999), Kumar (2003), Anderson and Reeb (2003) and Miguel *et al.* (2004), among others.

$$\begin{aligned} Performance_{it} &= \beta_1 3S_{it} + \beta_2 3S^{2}{}_{it} + \delta_1 Size_{it} + \delta_2 Age_{it} + {}_4 \\ &+ \delta_3 GO_{it} + \delta_4 Debt_{it} + \delta_5 CI_{it} + \delta_6 RDI_{it} + \varepsilon_{it} \end{aligned} \quad (2)$$

Equation 2: How Does Ownership Structure Influences Firm Performance?

We also confirm the presence of a linear relationship because Wruck (1988), Eisenberg et al. (1998), Morck et al. (2000) and Gedajlovic and Shapiro (2002) only confirm the monitoring effect.

3.2.3 Variations Across Industries and Countries

Equations 1 and 2 will be tested once more, but considering each industry and country, in order to measure the specific impact of industry and country of origin on performance.

[4] Equation of the maximum of ownership concentration of the quadratic relationship

$$\frac{\partial Performance_{it}}{\partial S3} = 0 \Leftrightarrow \beta_1 + 2\beta_2 3S_{it} = 0 \Leftrightarrow 3S_{it} = -\frac{\beta_1}{2\beta_2}$$

3.2.4 Endogeneity

Finally, the relationship between ownership structure and firms' performance is examined, in order to check whether it is a spurious one, injected by omitted variables. To do so, two equations will be estimated simultaneously (equation 3 and 4).

$$Performance_{it} = \alpha_1 3S_{it} + \alpha_2 3S^2_{it} + \gamma_1 Size_{it} + \\ + \gamma_2 Age_{it} + \gamma_3 GO_{it} + \gamma_4 Debt_{it} + \gamma_5 CI_{it} + \gamma_6 RDI_{it} + \varepsilon_{it} \quad (3)$$

Equation 3: Performance Estimation

$$3S_{it} = \rho_1 Performance_{it} + \gamma_1 Size_{it} + \gamma_2 GO_{it} + \\ + \gamma_3 Debt_{it} + \gamma_4 CI_{it} + \varepsilon_{it} \quad (4)$$

Equation 4: Ownership Structure Estimation

4. DATA AND METHODOLOGY

4.1 DATA SOURCES AND SAMPLE SELECTION

For our study we selected Continental European firms since the majority of the researches have been conducted in the U.S., the U.K. and Japan, in detriment of other countries. That means that other countries are sub-analyzed and, considering the role they have in corporate world (for example German firms), they are important to consider. We choose 9 European countries understudied in previous research, in order to comprehend the European context and to facilitate international comparisons. The sample includes all companies, from those 9 countries, included in the WorldScope database: Portugal, Spain, France, Belgium, Germany, Italy, Greece, Austria and Finland. The New European Countries were excluded due to the difficulty to secure sufficient data for the period in analysis (2000-2004).

All the financial data has been sourced from the DataStream database and the ownership information from Reuters. The initial sample contained about 3,400 firms, but after excluding missing financial data, especially the ratios of debt, market to book value and return on assets, the sample size came down to 2,105 companies. The lack of ownership data for some of the firms decreased the sample further to 884 companies.

	Medium Number of Companies	**Percentage of the Sample**
Austria	36	4,07%
Belgium	14	1,58%
Finland	87	9,84%
France	40	4,52%
Greece	103	11,65%
Germany	340	38,46%
Italy	143	16,18%
Spain	88	9,95%
Portugal	33	3,73%

Table 1: Structure of the Sample

4.2 VARIABLES

We included key variables associated with the ownership structure, more specifically with ownership concentration and insider ownership, and with firms' performance. Additionally, we included some control variables, which may also influence the relationships analyzed.

4.2.1 Ownership Variables

In terms of ownership variables we measured both the presence of large shareholders and management ownership, using Reuters' database. According to Zhou (2001), the ownership structure changes very slowly over time, so we assumed that the ownership pattern remained stable among sampled firms over the period 2000-2004.

- **INSIDER OWNERSHIP**

Insider ownership (*IO*) was measured as the percentage of ownership held by the President, Chief Executive Officer, Chairman and Vice-chairman of the board and Executive Director. This data was collected from Reuters' database. In countries where firms are mostly widely held, the ownership and control are normally separated, which can lead to problems of convergence of interests between them. Consequently, managers are offered shares as part of their compensation package, in order to align their interests with the shareholders'. On the other hand, firms with concentrated ownership are mainly controlled by a dominant shareholder and, so, free-riding problems are minimized. This variable enables the study of the implication of ownership concentration on insider ownership, as well as its influence on the performance.

- **LARGE OWNERSHIP**

The variable "large shareholders" (*3S*) was measured by the proportion of shares held by the three largest shareholders. The major shareholder can be the State, a family, a foreign investor, a financial institution or an individual. We have not classified ownership into these categories due to the difficulty of finding such specific information. Moreover, Faccio and Lang (2002) found that, typically, the firms can be categorized into two main groups: widely held or family controlled. The majority of Continental European firms (53.99 percent) are family held. These researchers

concluded that 60.34 percent of Portuguese firms, 55.79 percent of Spanish firms, 64.82 percent of French firms, 51.54 percent of Belgian firms, 64.62 percent of German firms, 52.86 percent of Austrian firms, and 48.84 percent of Finish firms are family controlled, while 28.68 percent of Finish firms, and 26.42 percent of Spanish firms are widely held. They did not include Greek firms in the analysis but, according to La Porta (1999), the generality of Greek firms is also controlled by families. Our sample includes Portugal, Spain, France, Belgium, Germany, Italy, Greece, Austria and Finland that have different ownership structure, so, we can verify whether differences across countries depend on the type of corporate governance or not.

4.2.2 Firms' Performance Variables

To measure the firms' performance we used both market and accounting measures, since there is no consensus about the optimal performance ratio. Market measures, as Tobin's Q ratio reflect all public information, but depend on the psychology of investors and can suffer from accounting artefact problems (the numerator is the market to book value, which can distort the performance in comparison to other firms). Accounting measures, on the other hand, are not adequate indicators of true performance due to their dependence on accounting practices and failure to take into account future prospects of firm's performance (Oswald and Jahera Jr., 1991; Ely, 1991; Demsetz and Villalonga, 2001).

- **TOBIN'S Q**

The Tobin's Q ratio (*Q*) was calculated dividing the market to book value plus debt by the total assets (Faccio and Lasfer, 1999:12, Demsetz and Villalonga, 2001:219). The majority of researchers used this ratio as a *proxy* of firm's performance, because it transmits market's image of the performance of the firm, taking into account both the past and the future perspectives of the performance.

- **RETURN ON ASSETS**

Finally, the return on assets (*ROA*) was obtained directly from DataStream's item of ROA. Gedajlovic and Shapiro (1998), Eisenberg *et al.* (1998), and others used this ratio to measure the performance because it measures the efficiency with which corporate assets are managed.

We expect Return on Assets and Tobin's Q to be correlated, as they measure, in different perspectives, the same variable: performance.

IV.2.3 Control Variables

We also included firm characteristics as control variables, to identify other possible determinants of performance not captured by the ownership variables. The control variables have been selected with reference to previous studies.

- **SIZE**

We considered the firm's size as a *proxy* of the natural logarithm of the company's sales (*ln Sale*) as Leech and Leahy (1991), Himmelberg *et al.* (1999), Cui and Mak (2002), Kumar (2003), and other researchers did. The firm's size has an ambiguous effect on its performance; on one hand, large firms have more agency costs because it is difficult to control all the activities, leading to a lower performance, but on the other hand large firms can benefit from economies of scale, better knowledge of markets and are able to hire more informed managers.

- **AGE**

The firm's age (*age*) is measured by the number of years between the firm's foundation and the year in analysis. According to Leech and Leahy (1991), Eisenberg (1998), Anderson and Reeb (2003), and Kumar (2003) this variable can influence the firm's strategy and consequently its performance. Older firms can benefit from economies of scale, accumulated knowledge about the market, experience, and reputation. Yet, older firms may also be more inflexible and bureaucratic.

- **GROWTH OPPORTUNITIES**

We controlled growth opportunities (*GO*) measuring year-over-year sales, as Gedajlovic and Shapiro (1998, 2002) have done. Firms with high growth opportunities can have a better performance because there are many investment opportunities that can generate innovation and improve the firm's efficiency. Furthermore, companies with low growth opportunities can have more agency costs as managers can make investments that maximize their self-interest at the expense of the company's value maximization.

- **DEBT INTENSITY**

The ratio of debt over total assets was directly taken from DataStream database and is an indicator of debt intensity (Demsetz and Villalonga, 2001; Cui and Mak, 2002; Anderson and Reeb, 2003; Kumar, 2003; Miguel *et al.*, 2004). Firms with higher levels of debt tend to have better performance not only because of higher control from the debt holders, but also because managers have to pay the cost of capital.

- **CAPITAL INTENSITY**

Capital Intensity (*CI*), measured by capital-to-sales ratio, is directly taken from the DataStream database, and analyzes the importance of 'hard' capital[5] in the firm's technology. This ratio was first used by Demsetz and Lehn (1985), Kumar (2003), and other researchers, and is associated with the firm's growth, because companies with more investment opportunities can spend more in new and innovative technology.

- **R&D INTENSITY**

We employed the ratio of R&D expenditures to sales in order to measure R&D intensity (*RDI*) (Demsetz and Lehn, 1985; Demsetz and Villalonga, 2001; Cui and Mak, 2002; Kumar, 2003) because firms with high R&D expenditures can have positive returns in the future and, consequently, can increase their performance.

- **ERROR**

ε_{it} is automatically generated by the program Eviews and represents the error term.

Table 2 presents the principal descriptive statistics: mean, medium, maximum, minimum and standard variation of each variable.

[5] Hard capital refers to installed capital (Kumar, 2003:12)

	ROA	Q	IO	IO^2	IO^3	S3	$S3^2$	Age	Size	GO	Debt
Mean	1.743	0.258	0.133	0.069	0.042	0.423	0.269	7.636	12.221	0.774	25.078
Median	3.353	0.231	0.000	0.000	0.000	0.445	0.198	5.000	11.939	0.097	24.685
Maximum	488.574	21.871	1.000	1.000	1.000	0.998	0.996	27.000	18.815	280.658	92.380
Minimum	-236.414	5.65E-07	0.000	0.000	0.000	0.000	0.000	0.000	5.798	-0.400	0.000
Std. Dev.	22.882	0.747	0.227	0.155	0.119	0.299	0.275	7.776	2.059	9.959	17.803

Table 2: Descriptive Statistics

The variables are the following: ROA- Return on Assets, Q- Tobin's Q, IO- percentage of insider ownership, IO^2- square of the percentage of insider ownership, IO^3- cubic of the percentage of insider ownership, S3- percentage of the three major shareholders, $S3^2$- square of the percentage of the three major shareholders, Age- firm age, Size- firm size, GO- growth opportunities, Debt- debt intensity

Observation:

We collected the data from the DataStream database in February and April 2006 and from Reuters in October and November 2006.

5. RESULTS

5.1. Correlations

To measure the linear relationship between two quantitative variables and to identify potential problems of multicolinearity we used the Pearson R correlation. This indicator varies between -1 and 1, and near the extreme values the linear association between variables is higher (Pestana and Gageiro, 1998).

The table 3 reports the correlation matrix for the full sample. Contrary to our expectations, the two alternative measures of the firm's performance, one based on accounting measures - ROA and another based on market measures Q (Tobin's Q) are not correlated (0,015). Likewise these variables can not be alternative measures. The ratio ROA was taken from the DataStream database and so it is expected to be correctly calculated. By contrast, the ratio Tobin's Q was calculated by us, using the Faccio and Lasfer, and Demsetz and Villalonga definition (Faccio and Lasfer, 1999:12, Demsetz and Villalonga, 2001:219). However, the variables used to construct the ratio, which were taken from the DataStream database, may not be the correct ones and consequently the ratio can be biased. The correlation between ROA and GO is 0.674, it means, that as ROA increases the variable GO also increases. The 0.303 correlation between manager's ownership (IO) and the three major shareholders (3S) is justified because the firm's owner can also be its manager. Moreover, none of the remaining variables is highly correlated, at least not to an extend which merits noting.

5.2. Regression Results

5.2.1. Insider Ownership and Performance

The Ordinary Least Square Regression permits to analyze the relationship between one dependent variable and several explanatory variables (Brooks, 2002).

After the analysis of the outliers, *"observations that do not fit in with pattern of the remainder of the data"* (Brooks, 2002:183), which was an examination of the *standardized* and *studentized residuals,* we take 31 outliers. Likewise, the data in analysis was reduced to 853 observations.[6]

[6]See Table 18, in attachment.

	ROA	Q	IO	IO^2	IO^3	S3	$S3^2$	Age	Size	GO	Debt
ROA	1.000										
Q	0.0152	1.000									
IO	0.120	-0.019	1.000								
IO^2	0.107	-0.010	0.948	1.000							
IO^3	0.087	-0.004	0.857	0.973	1.000						
S3	0.070	0.023	0.303	0.321	0.308	1.000					
$S3^2$	0.063	0.017	0.221	0.280	0.296	0.952	1.000				
Age	0.095	0.105	-0.099	-0.061	-0.035	0.103	0.115	1.000			
Size	0.182	0.118	-0.056	-0.042	-0.040	-0.012	-0.045	0.349	1.000		
GO	0.674	-0.004	0.054	0.046	0.031	0.038	0.046	-0.036	-0.007	1.000	
Debt	0.067	0.268	0.001	0.019	0.030	-0.031	-0.036	0.105	0.171	-0.006	1.000

Table 3: Correlation Matrix

The variables are the following: ROA- Return on Assets, Q- Tobin's Q, IO- percentage of insider ownership, IO^2- square of the percentage of insider ownership, IO^3- cubic of the percentage of insider ownership, S3- percentage of the three major shareholders, $S3^2$- square of the percentage of the three major shareholders, Age- firm age, Size- firm size, GO- growth opportunities, Debt- debt intensity

To test our first hypothesis we estimate the equation 1 analyzing the dependent variable firm's performance against insider ownership. We make three tests for each variable that measure the firm's performance: firstly we test a linear relationship between performance and insider ownership, then we test a quadratic relationship, and finally we test a cubic relationship. Only the first test represents a significant model. The results of cross-sectional Ordinary Least Square regressions of each of the two measures of the performance: ROA and Tobin's Q are displayed in Table 4. Due to the lack of information we exclude the variables of Capital Intensity and R&D Intensity.

	ROA	**Tobin's Q**
C	-19.6923 ***	-0.2970 **
IO	8.4168 ***	-0.0284
Age	0.1680 ***	0.0057 *
Size	1.4976 ***	0.0202
GO	1.6209 ***	
Debt		0.011 ***
R^2	62,91% ***	7,84%
Log Likelihood	-3387.523	-939.0660

*, **, *** Significant at the 10%, 5% and 1% levels, respectively

Table 4: Ordinary Least Squares regressions of ROA and Tobin's Q and insider ownership

62.91 percent (R^2) of the firm's performance, measured by the ratio ROA, are explained by the selected explanatory variables. We exclude the *debt intensity* ratio (Debt) because it was not an explanatory variable. We fail to confirm our first hypothesis, that there is a cubic relationship between ownership and performance. Nevertheless, firms' performance is affected positively and significantly by insider ownership, it means, we only confirm the alignment effect like Mehran (1995) and Morck *et al.* (2000). We also confirm that the variables *age, size* and *growth opportunities* affect positively the firm's performance at the 1 percent level of significance. May be there are *other variables,*

different from the ones used in the model, which explain the firm's performance, as for example the law, the macroeconomy scenario and the industry influence, among others.

As we conclude in the previous sub-section (5.1) the ratio Tobin's Q is not a good ratio to measure the firm's performance. Only 7.84 percent of the explanatory variables selected explain performance measured by Tobin's Q.

To validate the consistency of our model, we analyze the normality, the homecedasticity and the inexistence of the residuals autocorrelation, and the presence of multicolinearity.

- *Detection of heteroscedasticity*

One problem which may occur with the data is called heteroscedasticity, which means that we *"wrongly conclude that the errors had constant variance"* (Brooks, 2002:148). Likewise, to test this problem we use the White's general test for heteroscedasticity.

F-statistic	3.6966 ***
Obs*R-squared	49.6117 ***

*, **, *** Significant at the 10%, 5% and 1% levels, respectively

Table 5: White Heteroskedasticity Test

Since our probability is smaller than 5 percent of level of significance we reject the null hypothesis, it means, there exists heteroscedasticity, the Ordinary Least Squares estimators give unbiased coefficient estimates, but they are no longer BLUES (they do not have the minimum variance). To solve this problem, we use the option heteroscedasticity consistent coefficient covariance – White and find the same results of coefficients and probabilities with different standard error.

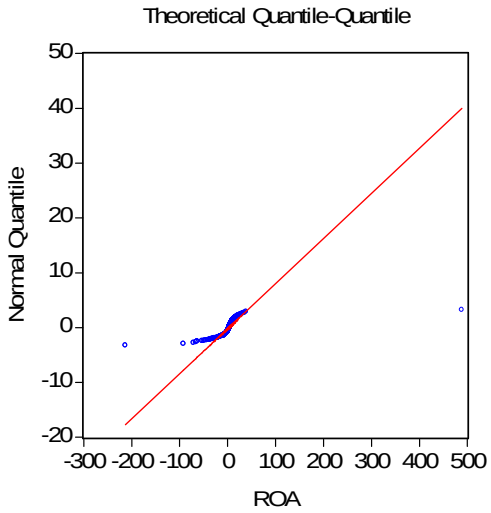
- *Autocorrelation Tests*

Another problem refers to the autocorrelation of the data, which occurs *"whether any relationships exist between the current value and any of its previous values"* (Brooks, 2002: 156). In this case the data are not correlated with the previous ones since we use the average of the data. However, the same results are found if we use the Durbin and

Watson test. Since this test is equal to 1.88, close to 2, there is no evidence of autocorrelation in the residuals.

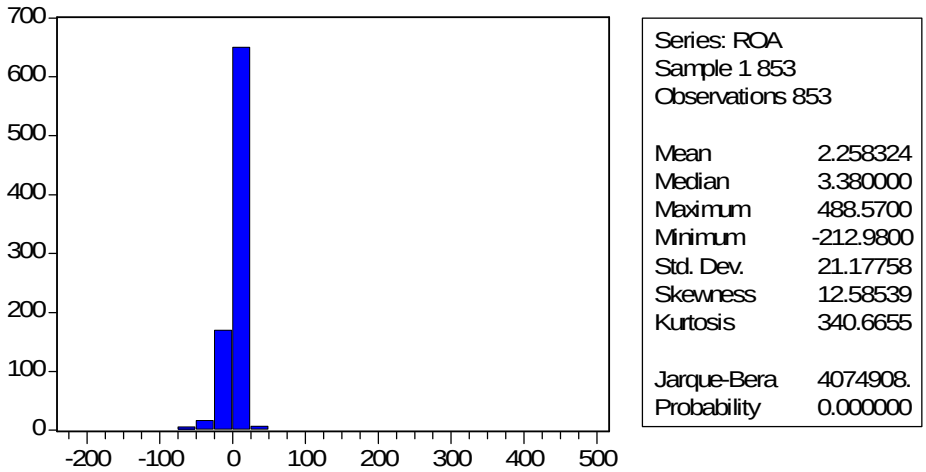
- *Normality Tests*

"*The normality assumption* ($u_t \sim N(0,\sigma^2)$) *is required in order to conduct single or joint hypothesis tests about the model parameters"* (Brooks, 2002: 178). To analyze this assumption we use the graphic Quantile-Quantile and the test Jarque-Bera.



Picture 3: Q-Q Plot (ROA)

Analyzing the picture 3 we see that not all the data are near the linear line, which indicates the violation of the residuals' normality hypothesis.



Picture 4: Jarque-Bera Test (ROA)

Moreover, since the Jarque-Bera statistic is significant at a 5 percent level of significance we reject the normality which means that our results can be biased because the variable ROA does not assume a normal distribution as the model used requires, and so the coefficient estimates could be wrong. However, since our sample includes 853 observations,*"the sample is sufficiently large to not give great cause for concern"* (Brooks, 2002:182).

- *Multicollinearity problems*

The Ordinary Least Squares estimation method assumes that the explanatory variables are not correlated with one another. Analyzing table 3 we verify that the independent variables are not significantly correlated, except when they are different metrics of the same variable.

5.2.2. Ownership Structure and Performance

To test the influence of the ownership structure on the firm's performance we estimate equation 2. We verify the existence of non-linear equation and a linear equation between the performance measures ROA and Q, and the variable 3S (three major shareholders). Results are shown in table 6.

	ROA	**Tobin's Q**
C	-18.8636 ***	-0.3371 **
S3	1.8965	0.0662
Age	0.1370 **	0.0055
Size	1.4740 ***	0.0209
GO	1.6291 ***	-0.0002
R^2	62,18% ***	7,90% ***
Log Likelihood	-3395.85	-938.79

*, **, *** Significant at the 10%, 5% and 1% levels, respectively

Table 6: Ordinary Least Squares regressions of ROA and Tobin's Q and ownership structure

Using the ratio ROA we have a model which explains 62.18 (R^2) of the firms' performance. Unlike most previous studies, we fail to confirm the influence of ownership structure on ROA, suggesting that the firms' performance is not affected by the level of ownership concentration, as we expected. This idea confirms that the ownership structure remains stable over the years and the shareholders do not change it to achieve higher performance (Zhou, 2001). Moreover, the variables *firm's age*, *size* and *growth opportunities* have a significant and positive influence on the performance, while *other variables* not included in the model have a negative influence at a 5 percent of significant level. Since the firm can gain from economies of scale and knowledge, *age* and *size* are positively related with performance. Moreover, a company with *growth opportunities* has many investment opportunities that lead to higher performance. Finally, *other variables* as the macroeconomic scenario, legal environment and culture can also influence the performance.

Once again we confirm that the Tobin's Q ratio is not a good estimator of the firm's performance because only 7.90 percent of the explanatory variables selected explain the performance.

Again, to validate the consistency of our model, we analyze the normality, the homecedasticity and the inexistence of the residuals autocorrelation, and the presence of multicolinearity. We fail to validate the residuals normality hypothesis, but as our sample is high enough, this problem is not significant. Moreover, we detect problems of heteroscedasticity, but we solve them using the option heteroscedasticity consistent coefficient covariance – White. Finally, we do not find problems of multicollinearity nor of autocorrelation.

5.2.3. Industry Effect

To verify if there exist industry effects on the firm's performance, we analyse the data from each one of the 12 industry: basic materials, capital goods, conglomerates, consumer cyclical, consumer non cyclical, energy, financial, healthcare, services, technology, transportation and utilities.

	Number medium of Companies	Percentage of the Sample
Basic Materials	79	9,34%
Capital Goods	123	14,54%
Conglomerates	13	1,54%
Consumer Cyclical	70	8,27%
Consumer Non Cyclical	58	6,86%
Energy	8	0,95%
Financial	82	9,69%
Healthcare	41	4,85%
Services	175	20,69%
Technology	158	18,68%
Transportation	20	2,36%
Utilities	19	2,25%

Table 7: Structure of the Sample by Industry

The results of estimating the equation 1 to each industry are available in table 8.

	Basic Materials	Capital Goods	Conglom.	Consumer Cyclical	Consumer Non Cyclical	Energy
C	-1.3722	0.8212	-9.9886	-0.3128	0.7436	-6.7160
IO	22.5283 ***	4.1194 **	5.1498	2.1787	17.0169 **	539.6060 **
IO^2	-33.0832 **				-22.1799 **	-860.7999 **
Age	-0.0756 **	-0.0114	-0.0344	-0.1155	-0.0775	-0.3374 *
Size	0.5067	0.4024	0.6978	0.6938 *	0.6109	0.8627 *
GO	6.2653 ***	0.3308 ***	3.4297	0.5868 ***	1.7123 ***	48.0137 **
Debt	-0.0510 **	-0.0698 **	0.0753	-0.1220 **	-0.1614 ***	-0.1405 *
R^2	32.44% ***	18.29% ***	19.41%	27.18% ***	99.54% ***	99.98% **
Log Likelihood	-204.13	-363.61	-30.09	-218.85	-166.68	8.23

	Financial	Healthcare	Services	Technology	Transport.	Utilities
C	0.5620	-43.5735 ***	-19.9399 **	-48.7091 ***	12.0736	1.0076
IO	-2.4130	4.1883	11.8589 **	18.2274 **	2.2889	-23108.44 ***
Age	-0.0413	0.1500	0.2804	0.4862	0.0669	-0.0691
Size	0.1414	2.8332 **	1.1481	3.8809 ***	-0.8638	0.4677 *
GO	0.7792 ***	-1.9214	0.0975	-5.1798 **	-1.7997	-7.5000 **
Debt	-0.0023	0.2773 *	0.1006	-0.0536	0.0572	-0.0384
R^2	17.45% **	45.23% ***	7.42% **	19.58% ***	16.87%	79.73% ***
Log Likelihood	-275.04	-156.01	-750.12	-664.18	-56.26	-29.812

*, **, *** Significant at the 10%, 5% and 1% levels, respectively

Table 8: Ordinary Least Squares regressions of ROA and insider ownership by industry

Table 8 reports the results of the Ordinary Least Squares regression of ROA and insider ownership by industry. As we expected, there are significant differences among industries. To some industries we confirm that insider ownership affects positively the performance, to others we find a quadratic relationship, while to others we fail to find any relationship. Finally we confirm our hypothesis number 3, which says that the industry influences the relationship analysed.

The model used to the industry Basic Materials explains 32.44 percent of the firm's performance. Contrary to the whole group we find a quadratic relationship between insider ownership and performance, meaning that the performance increases until the manager owns 34.05 percent of the firm's shares, confirming the alignment effect, and after that level the performance decreases due to the entrenchment effect. Managers can create a board difficult to monitor, appropriate a part of the profits and stay in the job even if they are not competent for doing it. Moreover, we do not find any relationship at higher levels of insider ownership, which means that as the shares are concentrated in the hands of manager, he may satisfy his self interest, at the expense of the firm's wealth. The variables *age* and *growth opportunities* positively affect the firm's performance, while *debt intensity* and *age* have a negative influence, to a 5 percent level of significance. The model faces some problems of normality of the residuals, but as we

have 79 observations this problem is not significant. Additionally, the model does not face problems of heterocedasticity nor of autocorrelation. A similar conclusion is obtained when we analyse the relationship between insider ownership and firm performance to the industry Consumer Non Cyclical. The performance increases as the shares in the hands of manager increases till 38.36 percent, and decreases after that level. This model explains 99.54 percent of the performance. Additionally, the variable *growth opportunities* has a positive influence on the firm's performance and *debt intensity* has a negative influence, to 1 percent of level of significance. Finally, for the Energy industry we find the same quadratic relationship, with a maximum of 31.34 percent. However, as we only have 8 observations, this model suffers problems of normality, which means that all the conclusions can be spurious. To the industries Capital Goods, Services and Technology, we confirm a positive relationship between insider ownership and performance, as we found in subsection 5.2.1. The model used to Capital Goods explains 18.29 percent of the performance measured by ROA. Moreover, *growth opportunities* and *debt intensity* also influence performance in a positive and negative way, respectively, to a level of significance of 5 percent. To Services, after we solve the problem of heterocedasticity, and as the problem of normality is not very important since we have 81 observations, we find that the model used explains 7.43 percent of the performance. However, *other variables* not included in the model can also be helpful to explain the firm's performance. Lastly, to Technology industry, the model used describes 19.58 percent of performance. The variables *size* and *growth opportunities* also influence performance in a positive way, while there may exist other variables not included in the model which may explain it in a negative way. To Utilities industry, the performance is negatively influenced by insider ownership. However, this conclusion may not be correct since the model, which has 19 observations, suffers from problems of the normality of the residuals. To the other industries, namely Conglomerate, Consumer Cyclical, Financial, Healthcare and Transportation we did not find a conclusion of the relationship between performance and insider ownership because or the model is not significant to explain that relationship or there are problems of the normality of the residuals.

	Basic Materials	Capital Goods	Conglom.	Consumer Cyclical	Consumer Non Cyclical	Energy
C	-3.3618	1.3045	-31.3768 *	-2.4408	-1.9902	15.7323
S3	14.8007 ***	0.8743	-30.6742 *	15.7896 **	12.9165 *	6.2341
$S3^2$	-13.6313 ***		58.0407 **	-18.5835 **	-13.6239 *	
Age	-0.0734 **	-0.0289	0.1501	-0.1068	-0.0693	0.68865
Size	0.4918	0.3999	1.9388 *	0.7754 *	0.7044 *	-1.0995
GO	6.2902 ***	0.3287 *	-45.3408	0.6162 ***	1.7189 ***	-15.6499
Debt	-0.0422 *	-0.0746 **	0.2331 *	-0.1279 ***	-0.1430 ***	0.18350
R^2	33.82% ***	15.23% ***	68.63%	32.03% ***	99.54% ***	48.06%
Log Likelihood	-203.31	-365.88	-23.96	-216.44	-166.92	-22.51

	Financial	Healthcare	Services	Technology	Transport.	Utilities
C	-0.2765	-43.0064 **	-16.3702 *	-46.9245 ***	19.8058 **	-4.4697
S3	0.5941	3.4473	-0.4085	-1.5162	-6.5584	2.0685
Age	-0.0389	0.1466	0.2949	0.3539	-0.0194	-0.0138
Size	0.1588	2.6899 **	1.0979	4.0130 ***	-1.1447	0.6697
GO	0.7636 ***	-1.8369	-0.1665	-5.0908 **	-2.2579	-8.8071
Debt	0.0036	0.3021 **	0.0782	-0.0697	0.0725	-0.0063
R^2	17.27% **	45.22% ***	4.87%	16.07% ***	23.59%	25.47%
Log Likelihood	-275.13	-156.01	-752.48	-667.56	-55.42	-42.19

*, **, *** Significant at the 10%, 5% and 1% levels, respectively

Table 9: Ordinary Least Squares regressions of ROA and ownership structure

According to the relationship between performance and ownership structure we also find different conclusions depending on the industry analysed. The model used to the industry Basic Materials explains 33.82 percent of the firm's performance. We find that performance increases as the shares concentrated in the hands of one individual or institution is equal to 54.29 percent, confirming the monitoring effect, and decreases after that level due to the expropriation effect, it means, dominant shareholders try to

expropriate minorities' wealth. The variables *age* and *growth opportunities* are positively related to performance, while debt intensity has a negative influence. To the industries Consumer Cyclical and to Consumer Non Cyclical we also find a quadratic relationship between performance and ownership structure, and the model explains 32.03 and 99.54 percent, respectively, of the performance. Moreover, we find a maximum when ownership is concentrated at 42.48 and 47.40 percent. The variables *size* and *growth opportunities* also influence the performance, while *debt intensity* has a negative influence. To Conglomerates industry the model used is not significant and consequently we can not take any conclusion. Finally, to the others industries, namely Capital Goods, Energy, Financial, Healthcare, Services, Technology, Transportation and Utilities we fail to find a relationship between firm performance and ownership structure.

5.2.4. Country Effect

In our analysis we include 9 Continental European countries: Austria, Belgium, Finland, France, Germany, Greece, Italy, Spain and Portugal. Each nation has its own characteristics, legal environment and macroeconomics scenario. Likewise, to verify our hypothesis 4, we test equations 1 and 2 by country.

	Austria	**Belgium**	**Finland**	**France**	**Germany**
C	0.3488	17.1152 **	-10.3182	-18.6217	-33.4999 ***
IO	7.7939 **	86.4750 **	13.2796 **	10.7975	9.3216 **
IO^2		-158.3868 ***			
Age	0.2116 **	-0.0301	0.1177	0.05593	0.2785 **
Size	0.0843	-0.7753	1.1598 *	1.4575	2.2442 ***
GO	0.3364 ***	8.1459	-1.3153	2.4365	1.2861 **
Debt		-0.1104 **			
R^2	57.11% ***	74.06% *	10.73% *	9.98%	14.52% ***
Log Likelihood	-90.00	-27.44	-309.93	-153.38	-1366.57

	Greece	Italy	Spain	Portugal
C	-0.9366	-17.8335 ***	1.2296	-14.3255
IO	3.0869 *	11.2801 ***	16.0899 **	2.9480
IO^2			-19.6575 **	
Age	-0.2914 ***	0.0974	0.0488	0.4633
Size	0.8080 ***	1.0885 **	0.1842	1.2349
GO	1.7062 ***	0.5832 **	9.5553 ***	-7.3563
Debt	-0.1132 ***	0.0537	-0.0483	-0.1215
R^2	99.25% ***	15.43% ***	39.97% ***	14.56%
Log Likelihood	-285.36	-512.79	-234.52	-114.10

*, **, *** Significant at the 10%, 5% and 1% levels, respectively

Table 10: Ordinary Least Squares regressions of ROA and insider ownership by country

In fact, analysing the relationship between insider ownership and performance of each country in separate we find country-effects, confirming our hypothesis number 4.

In Belgium, we find a non-linear relationship between insider ownership and firm performance: the performance increases until the manager owns 27.30 percent of the firm's shares, due to the alignment effect between managers and owners' interests, and decreases after that level, confirming the entrenchment effect. We fail to confirm the alignment effect at higher levels of insider ownership. *Debt intensity* is negatively related to performance at the 5% level of significance. Finally, there are *other variables* not included in the model that positively influence the performance. The model described explains 74.06 percent of the performance and does not face any problem of multicollinearity, heteroscedasticity, normality and autocorrelation of the residuals. In Spain, we also find a quadratic relationship between performance and insider ownership, meaning that performance increases till insider ownership reaches 40.93 percent and decreases after that, confirming both the alignment and the entrenchment effect. Additionally, *growth opportunities* is also positively related to performance. The model, which explains 39.97 percent of the performance, faces some problems of

heteroscedasticity, that were solved using the White proceed, and problems of normality, but as the sample has 82 observations this problem is not so evident. 99.25 percent of the firm's performance is explained by the model applied to Greece. Insider ownership affects positively and to a level of 10 percent of significance the performance, confirming the alignment effect. Additionally, *size* and *growth opportunities* are also positively related to performance, while *age* and *debt intensity* influences it negatively. We reject the residuals normality hypothesis, but as the model has 101 observations, this problem is not so significant. In Finland we find a positive relationship between performance and insider ownership and *size*, at the 5 percent level of significance. However, the model is not significant, since R^2 is 5.66 percent and the results find can be spurious because we find problems of normality of the residuals. In Germany, we fixed all problems of heteroscedasticity and normality of the residuals, and found that the model explains 14.52 percent of performance. There is a positive and significant relationship between performance and insider ownership at the 5 percent of level of significance, confirming the alignment effect. Moreover, *age*, *size* and *growth opportunities* also contribute positively to explain performance, while there are *other variables*, not used in the model, which negatively explain it. In Italy we discover a positive relationship between insider ownership and ROA, but the model applied only explains 15.43 percent of performance. Moreover, *size* and *growth opportunities* also have a positive influence on performance, while there may exist *other variables* different from the ones used in the model, with a negative relationship. All problems of normality and heteroscedasticity were solved. In Austria, we also find a positive relationship between performance and insider ownership, at the 5 percent level of signification. Moreover, *age* and *growth opportunities* also have a positive relation with performance. However, the model, which explains 57.11 percent of performance, may be inconsistent since we reject the normality of the residuals, it means, the coefficient estimates could be wrong. Finally, we do not find any consistent conclusion in France and Portugal, may be due to the fewer data to this countries. Moreover, we find divergence among the probability of the t-statistic and the F-statistic, which shows problems of normality of the residuals.

	Austria	Belgium	Finland	France	Germany
C	-1.8678	8.6877	-5.1406	-14.8124	-32.9656 ***
S3	4.3479 *	5.6846	-3.0832	1.9306	1.3528
Age	0.1572 **	-0.0197	0.1229	0.1348	0.2452 **
Size	0.1924	-0.3483	0.8393	1.2023	2.2449 ***
GO	0.3705 ***	-5.3704	-1.1975	3.2139	1.2346 **
Debt	-0.0124		0.0232	-0.0377	0.0898 *
R^2	57.77% ***	21.09%	6.10%	6.81%	13.29% ***
Log Likelihood	-89.73	-35.23	-312.09	-154.06	-1368.9

	Greece	Italy	Spain	Portugal
C	-0.3716	-23.5119 ***	3.7399	-15.622
S3	0.7126	13.7699 ***	-0.5649	1.3948
Age	-0.3014 ***	0.0497	0.0321	0.4753
Size	0.7898 **	1.1722 ***	0.0858	1.2613
GO	1.7094 ***	0.5162 ***	9.3111 ***	-7.8753
Debt	-0.1124 ***	0.0579	-0.0483	-0.1071
R^2	99.23% ***	15.30% ***	35.26% ***	14.18%
Log Likelihood	-286.75	-512.90	-237.6157	-114.1747

*, **, *** Significant at the 10%, 5% and 1% levels, respectively

Table 11: Ordinary Least Squares regressions of ROA and ownership structure by country

Analysing the effect of the ownership structure on performance by countries we find many divergences. In Belgium, Finland, France, Germany, Greece and Portugal there is no evidence that ownership structure influences performance. Moreover, the model used in Belgium, Finland, France and Portugal is not a good model as there are other variables which together can explain performance. Nevertheless, the model applied to

Austria explains 57.70 percent of performance. We find that the ownership structure positively influences performance, confirming the monitoring effect: as the ownership structure is more concentrated performance increases because the firm's owner may try to pass the firm onto the next generations, which leads to a long term view and a better performance. Moreover, *age* and *growth opportunities* are also positively related to performance. Finally, the model used to explain performance of Italian firms, could explain 15.30 percent. Ownership concentration and performance are positively related, confirming the monitoring effect. Additionally, *growth opportunities* has a positive influence on performance.

5.2.5. Endogeneity

Finally, to test our last hypothesis we apply the Two-Stage Least Square model (2SLS) in order to verify if the dependent variable ROA is correlated with the independent variable ownership structure. Moreover, with this model we can observe if there is more than one dependent variable.

In fact, analyzing the subsection 5.2.2 we find that the ownership structure does not influence performance, but is the contrary true? Testing the equations 3 and 4 simultaneously we obtain the following results:

	3S **Instrument list: ROA, 3S, age, size, GO, debt**
C	0.5333 ***
ROA	0.0010
Age	0.0047 ***
Size	-0.0105 **
GO	-0.0002
Debt	-0.0006
R^2	1.89% ***

*, **, *** Significant at the 10%, 5% and 1% levels, respectively

Table 12: Two Stage Least Squares regressions of ROA and ownership structure

Analyzing table 12 we find that the variable three major shareholders is not explained by the performance measured by ROA. Likewise we confirm our hypothesis 5 that say that ownership structure is an exogenous variable. This means that the results found before are robust.

6. DISCUSSION

6.1. Insider Ownership and Performance

We examined the influence of insider ownership on firm performance in 9 Continental European countries: Portugal, Spain, France, Belgium, Germany, Italy, Greece, Austria and Finland. Controlling the variables *age, size, growth opportunities* and *debt intensity* we found evidence of a positive relationship. It means that manager ownership of the firms' shares is positively related to the performance, because the interests of managers and owners are aligned. Moreover, the firm's owner-manager is concerned with the firm's long term survival, and consequently he invests in high quality projects in order to increase his own and the firm's wealth. Likewise we can conclude that a contract manager, even if he has more knowledge about the market and the job, is expensive to the firm, due to the total cost of his compensation package and the negative impact of objectives divergence – leading to suboptimal strategies and monitoring costs.

Furthermore, country effects exist in the insider ownership-firm performance relationship. In Germany, Italy, Greece, Austria and Finland we confirm the positive relationship between insider ownership and performance. However, we found a quadratic relationship in Belgium and Spain, implying that performance increases till managers own 27.30 and 40.93 percent, respectively, of the firm' shares and it decreases after that level, confirming the alignment and the entrenchment effect. Up to those levels of management ownership, the interests of managers and owners are aligned. However, after a certain level managers may create a board difficult to monitor or can appropriate a part of the profits, reinforcing the entrenchment effect. Furthermore, we failed to confirm the alignment effect at higher levels of insider ownership, may be because at higher levels of ownership, managers may try to satisfy their own interests at the expense of firm's value maximization. Finally, in Portugal and France we have not been able to identify a consistent relation due to the insufficiency of available data.

We verified that insider ownership leads to higher performance, especially because it influences the strategic behavior and consequently the performance of the firm. However, we did not confirm the cubic relationship observed in other studies. This difference is significant as the dominant fields of observation have been the US and the UK: The so called Anglo Saxon nations tend to have more developed capital markets as

well as cultural and legal environments that markedly diverge from the Continental European nations covered in this study. In the U.S. and the U.K. the ownership structure is normally dispersed, and consequently the firm's manager is a professional hired for the job and not one of the firm's owners, in contrast with the countries included in our sample were the ownership structure is normally concentrated and the manager is the firm's owner or a highly monitored professional specifically contracted for the job. Likewise, the power and influence of professional managers used to be higher in the U.S. and U.K. enabling them to create a board difficult to monitor, raising the potential for profits appropriation and job entrenchement. Our findings suggest that the organizational mode predominant in Continental Europe is efficient, as insider ownership unambiguously leads to higher performance.

There are some specificities, though. Belgium and Spain differ from other Continental European nations suggesting the existence of different agency costs and specific institutional characteristics. The manager may have some liberty to take actions and likewise we confirm two effects: the alignment and the entrenchment effect. Nevertheless, we did not find a cubic relationship between managerial ownership and firm performance in Spain as Miguel *et al.* (2004) did. This can be due to the different variable used to measure the performance because we use an accounting measure, ROA, while Miguel *et al.* used a market measure, Tobin's Q. Moreover, the databases used were also different, which can also influence the results.

Finally, we verified that industry also affects the relationship between insider ownership and firm performance. Only in Capital Goods, Services and Technology we confirmed a positive relationship between insider ownership and performance, suggesting that in these industries management ownership leads to higher performance confirming the importance of the alignment effect. The firm's manager is often its owner as well. If he is a professional contracted for the job, the firm's owner may try to monitor him in order to guarantee the pursuit of value maximizing strategies. However, in other industries we found confirmation of a quadratic relationship. This effect is present in Basic Materials and Consumer Non Cyclical industries, suggesting a more specific culture in these industries that enables managers to make more independent decisions. The performance increases till managers reach 34.05 and 38.36 percent ownership, respectively, of the firms' shares, and decreases after that level because as insider ownership increases, the manager may try to satisfy his self-interest rather than

maximizing the value of the firm. To conclude, in the remaining industries under scrutiny, namely Financial, Conglomerate, Consumer Cyclical, Healthcare and Transportation, we have insufficient data to generate conclusive results. The different results obtained suggest that different industries face different environmental and structural differences including concentration, research and development, competitiveness, maturity, growth opportunities, financial pressure and others.

6.2. Ownership Structure and Performance

We also examined empirically the relationship between the ownership structure and the performance using a panel data of 853 Continental European firms over 2000-2004, from an agency costs perspective. Contrary to our expectations, we could not find a significant relationship between performance and ownership structure, suggesting that concentration does not have a positive or negative impact on performance.

We found that individuals do not choose the ownership structure that maximizes the firm's performance, but rather that maximizes the relationship benefits-costs, according with their self strategy. Likewise, these results clearly contradict the findings of Demsetz and Lehn (1985), Cho (1998), Himmelberg *et al.* (1999), and Demsetz and Villalonga (2001), who concluded that ownership variables are endogenously determined in equilibrium by changes in ownership structure in ways consistent with the firm's performance maximization. Using a Two-Stage Least Squares model we also confirmed that our results are not spurious, it means, the performance does not influence the ownership structure neither the contrary. Moreover, there may exist *other variables* that influence the firm's performance, such as the *firm's age*, *size* and *growth opportunities*. These results are in accordance to Zhou (2001), who concludes that ownership structure remains stable over the years as investors avoid frequent ownership structure changes, due to the adaptation and coordination costs.

We have also analyzed the country effect on the relationship between performance and ownership structure. In most nations: Belgium, Finland, France, Germany, Greece, Portugal and Spain the model used was not significant, as we did not found any influence of ownership structure on the performance. Though we know that most the

firms in these countries have concentrated ownership, and minority investors are scarcely protected by law, they may exercise an active role in the firm, taking decisions and collaborating on the firm's strategy in order to avoid expropriation by majority investors. However, in Austria and Italy we discovered a different influence: performance increases as the shares are more concentrated, confirming the monitoring effect. In this case, the dominant shareholder may try to maximize the firm's wealth since it leads to an increase in his own wealth. These results may reflect country specific culture, institutional characteristics and legal framework.

Our results differ from those obtained by Thomsen and Pedersen (2000), who also study the relationship between ownership structure and performance in European countries. They found a quadratic relationship showing that performance increases as ownership structure is more concentrated, till a maximum is reached, and decreases to higher levels of concentration, due to minority's expropriation. These differences in results may depend on the sample, especially because we used a different database and can also be influenced by the model described to confirm the relationship between ownership structure and firm performance. Moreover, the results are also different when we compare with those obtained for the U.S. and the U.K.. However, in these cases we have a different predominant type of ownership structure because in the U.S. and the U.K. the majority of the firms have dispersed ownership while in Continental Europe the majority of the firms have concentrated capital. However, this is a common pattern of previous studies, as some researchers obtained a positive and linear relationship (Wruck, 1988, Morck *et al.*, 2000, Gedajlovic and Shapiro, 2002 and Eisenberg *et al.*, 1998), a second group found a negative and linear relationship (Leech and Leahy, 1998, Mudambi and Nicosia, 1998), a third obtained a quadratic relationship (Gedajlovic and Shapiro, 1998, Thomsen and Pedersen, 2000, Claessens *et al.*, 2002, and Miguel *et al.*, 2004) and some could not find any significant relationship.

Finally, we document differences in industries when analyzing the relationship between ownership structure and firm performance by industry. In most industries we fail to find any influence, as we have already documented. However, in Basic Materials, Consumer Cyclical and Consumer Non Cyclical we found a quadratic relationship, showing that performance increases as ownership structure reaches 54.29, 42.48, and 47.40 percent, respectively, of concentration, and decreases after those levels, suggesting a problem of

minorities' wealth expropriation. These differences in results may result from the sector influence, namely in regard to culture, financial pressure competition and growth opportunities.

7. CONCLUSION

7.1. Main Results

We analyzed the impact of insider ownership and ownership structure on performance.

Our results show that insider ownership influences positively the firm performance, possibly due to a more efficient alignment. As the share of capital owned by the manager increases, he may be more concerned with the firm's wealth and interests leading to a higher performance. The eventual family links and networking may also facilitate deals and enhance the firm's value. Hence, the owner-manager has a better performance than a professional manager, not only because the interests of the manager and owner are aligned but also because they make an effort to pass the firm onto the next generation. Less pressure for exhibiting short term profits which plague the managers of listed companies, may lead to value creating strategies. These results are observed in most of the Continental European countries analysed. However, in France and Portugal we failed to find a clear picture, while in Belgium and Spain we discovered a quadratic relationship, indicating the presence of alignment and the entrenchment effect. We also confirm some industry effects, suggesting that different types of competition, market forces, growth opportunities, and other factors lead to different levels of performance.

Additionally, we failed to find the impact of ownership structure on firm's performance, showing that the level of ownership concentration does not influence corporate performance in European countries. Therefore we can not conclude that ownership concentration leads to better performance than dispersed ownership. Moreover, we confirmed that ownership is an exogenous variable, and does not depend on the firm's performance as Demsetz and Lehn (1985), among others, found. Likewise, ownership remains relatively stable over time and does not change in order to achieve higher performance. Hence, we can not infer that ownership mitigates agency problems. To conclude, we found that country and industry play a role as the results are sensitive to the country and industry effects.

7.2. Study' limitations

Owing to our data limitations we have ignored two of the six control variables: the capital intensity and R&D intensity, because we could only obtain these data for a

limited number of firms. Moreover, we also lost many observations because we used 2 databases to construct our sample, and it was difficult to find sufficient information on ownership, attending to our financial data. Hence, we fail to have significant data from some countries and industries, which limits our conclusions. Finally we have not identified the major shareholder: the State, a family, foreign investors, financial institutions, individuals or other investors due to the difficulty of finding such information.

7.3. Suggestions for further analysis

In this section we outline the results of some of this further testing. First we can analyze in detail which reasons cause the industry-effect. We found that industry has a significant impact, possibly due to competition, market force, debt pressures and growth opportunities, among others. Nevertheless, further research is required to measure the impact of each of these items on performance. This topic is important especially to investors who know how to use these performance drivers to optimize their investments. It is also important to analyze whether ownership concentration is associated to family firms, because in our case the major shareholder can be another firm, the State, a financial institution or an individual. Due to identification problem we can not conclude that family firms perform better than non family firms, as Anderson and Reeb (2003) found, although there is evidence of a similar result.

Finally, we also could not analyze if the return and risk of firms with ownership concentration are different from the ones obtained in firms with dispersed ownership. In fact the market for family firms is very illiquid, since there is a tendency to preserve ownership within the family. Therefore, few transactions made by minority investors, which leads the market to under-evaluate family firms. Consequently firms with ownership concentration may have lower return and risk (Burkart *et al.*, 2003; Cubin and Leech, 1983). Additionally the small return expected for family firms may be due to the propensity of the major investors to be risk averse. Owners may prefer to take conservative strategic actions in order to pass the firm onto the next generations (Anderson and Reeb, 2003).

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9. ATTACHMENTS

9.1. Synthesis of Previous Evidence

	UNITED STATES	UNITED KINGDOM	JAPAN	SPAIN	INDIA
POSITIVE AND LINEAR RELATION	Mehran (1995)	-	Morck *et al.* (2000)	-	-
QUADRATIC RELATION	Stulz (1988) Max: 40-50% McConnel and Servaes (1990) Max: 40-50% Han and Suk (1998) Max: 40-50%	Mudambi and Nicosia (1998) Max: 11%	-	-	Kumar (2003) Min: 24%
CUBIC RELATION	Morck *et al.* (1988) Max: 5% Min: 25% Cho (1998) Max: 7% Min: 38% Holderness *et al.* (1999) Max: 5% Min: 25%	Short and Keasey (1999) Max: 12,99% Min: 41,99% Faccio and Lasfer (1999) Max: 19,68% Min: 54,12%	-	Miguel *et al.* (2004) Max: 35% Min: 70%	-
W-SHAPED RELATION	Cui and Mak (2002) Min: 10%, 50% Max: 30%	-	-	-	-

Table 13: Previous Evidence: Insider Ownership and Performance

	UNITED STATES	UNITED KINGDOM	GERMANY	JAPAN	SPAIN	EUROPE	EAST ASIA	FINLAND
POSITIVE AND LINEAR RELATION	Wruck (1988)	-	-	Morck *et al.* (2000) Gedajlovic and Shapiro (2002)	-	-	-	Eisenberg *et al.* (1998)
NEGATIVE AND LINEAR RELATION	-	Leech and Leahy (1998) Mudambi and Nicosia (1998)	-	-	-	-	-	-
QUADRATIC RELATION	Gedajlovic and Shapiro (1998) Anderson and Reeb (2003)	-	Gedajlovic and Shapiro (1998)	-	Miguel *et al.* (2004)	Thomsen and Pedersen (2000)	Claessens *et al.* (2002)	-

Table 14: Previous Evidence: Ownership Structure and Performance

9.2. Variables Description

DEPENDENT VARIABLES	
VARIABLES	**DEFINITION**
Q	Tobin's Q is measured by the ratio of the market to book value plus the debt by the total assets
ROA	Return on Assets

Table 15: List of Dependent Variables

(Source: DataStream)

OWNERSHIP VARIABLES	
VARIABLES	**DEFINITION**
5S	Large shareholder is measured as a proportion of shares held by the three largest shareholder
IO	Managerial ownership is measured as the percentage of ownership held by the President, Chief Executive Officer, Chairman and Vice-chairman of the board and Executive Director

Table 16: List of Ownership Variables

(Source: Reuters)

CONTROL VARIABLES	
VARIABLES	**DEFINITION**
Size	Firm size is measured by ln(Sale)
Age	Age is count from the start date of the company till the year in analysis
GO	Growth Opportunities is measured by year-over-year sales
Debt	Debt Intensity is measured by the ratio of the debt over the total assets
CI	Capital Intensity is measured by capital-to-sales ratio
RDI	R&D Intensity is measured by the ration of R&D expenditures to sales
Risk	Risk is measure by the sample risk measure

Table 17: List of Control Variables

(Source: DataStream)

9.3. A Structure of the Sample

	Number medium of Companies	Percentage of the Sample
Austria	35	4,10%
Belgium	14	1,64%
Finland	85	9,96%
France	39	4,57%
Greece	101	11,84%
Germany	324	37,98%
Italy	140	16,41%
Spain	82	9,61%
Portugal	33	3,87%

Table 18: Structure of the Sample after outliers